

took this photo off of Gab Gab Beach in Guam while I was searching for long-spined sea urchins (*Diadema spp.*) around the island. The small blue fish are juvenile Damsel Fish (*Chromis spp.*), the small blue spotted fish are Filefish (*Oxymonacanthus spp.*), and the coral are Staghorn/Elkhorn coral (*Acropora spp.*).

Although not in this photo, we did observe large numbers of long-spined sea urchins, which is significant since they are culturally important to the Chamorro people (the indigenous people of Guam) and are known to be relatively sensitive to contaminants including copper and nickel.

My Space and Naval Warfare Systems Center Pacific colleagues and I were tasked by the Naval Facilities Engineering Command Marianas to support the development of site-specific water quality objectives for the region. This work included generating toxicity data for copper and nickel using important and sensitive species that reside in the nearshore areas around Guam. These data were integrated into a comprehensive science-based strategy for wastewater discharges to Tipalao Bay, which is under consideration by the Guam Environmental Protection Agency and the U.S. Environmental Protection Agency Region IX.

I took these photos with a Nikon COOLPIX AW100 at an F-stop of 3.9.

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